

## CLAIMS

1. A method of mixing a second medium with a first medium, in which method the first medium is introduced into the casing of a mixing apparatus, where it is mixed and discharged therefrom, **characterized** in that the rotor of the mixer, disposed in the casing, is rotated with a medium flow entering the casing.
2. A method as recited in claim 1, **characterized** in that the first medium is a fiber suspension of the wood processing industry.
3. A method as recited in claim 1 or 2, **characterized** in that the mass center of the medium flow entering the casing of the mixer is deviated from the central flow, for leading the flow suitably, to make the rotor of the mixer rotate.
4. A method as recited in claim 1 or 2, **characterized** in that the flow entering the mixer casing is throttled, for controlling the flow rate so as to make it suitable for rotating the rotor of the mixer.
5. A method as recited in claim 1 or 2, **characterized** in that the flow entering the casing of the mixer is throttled so as to achieve a desired pressure difference.
6. A method as recited in claim 5, **characterized** in that the pressure difference is adjusted to a range of 0.5 to 2.5 bar.
7. A method as recited in claim 4, **characterized** in that the velocity of the medium flow entering the casing of the mixer after throttling is 10 to 20 m/s.

8. A method as recited in claim 1 or 2, **characterized** in that medium to be mixed is introduced into the casing of the mixer or into the inlet piping preceding the mixer.

5 9. A method as recited in claim 1 or 2, **characterized** in that dynamic pressure is recovered from the flow being discharged from the mixer.

10 10. A method as recited in claim 8, **characterized** in that the medium to be mixed is steam, water, oxygen, chlorine dioxide, or some other equivalent matter.

15 11. An apparatus for mixing a second medium with a first medium, comprising a mixer casing (10) with an inlet (12) and an outlet (16), both of these having a flange (14, 18), and with a rotor (20), **characterized** in that the rotor is freely rotatable.

20 12. An apparatus as recited in claim 11, **characterized** in that the inlet (12) of the casing (10) is provided with members (26, 126, 226; 30, 130, 230) for throttling the flow.

25 13. An apparatus as recited in claim 12, **characterized** in that the throttling member is a rib (26, 126, 226) disposed in the vicinity of the inlet in the casing, for deviating the mass center of the flow entering the casing (10) from the central flow.

30 14. An apparatus as recited in claim 12, **characterized** in that the throttling member is a valve (30, 130, 230) disposed in the vicinity of the inlet (12), for deviating the mass center of the flow entering the casing (10) from the central flow.

35 15. An apparatus as recited in claim 14, **characterized** in that the valve (30, 130, 230) is arranged either as part

of the mixer casing (10) or to be attached to the flange (14) of the casing (10) of the mixer or to serve otherwise as part of the inlet piping of the mixer.

- 5      16. An apparatus as recited in claim 11, characterized in that the casing is provided with at least one mixing member (26, 28; 126, 128; 226, 228).
- 10      17. An apparatus as recited in claim 16, characterized in that at least one of the mixing members (26, 28; 126, 128; 226, 228) is arranged against the direction of rotation of the rotor at a distance of at least 90 degrees from the outlet (16) of the casing (10).
- 15      18. An apparatus as recited in claim 15 or 16, characterized in that the mixing member is a rib (26, 28; 126, 128; 226, 228) attached to a wall of the casing (10).
- 20      19. An apparatus as recited in claim 11, characterized in that the casing (10) or the inlet piping of the mixer is provided with a conduit (38, 38'; 138, 138'; 238, 238') for feeding a second medium into the first medium.
- 25      20. An apparatus as recited in claim 11, characterized in that the outlet (116, 216) of the casing (10) is provided with a diffuser-like outlet pipe, which recovers dynamic pressure.
- 30      21. An apparatus as recited in claim 11, characterized in that the rotor is formed of a shaft mounted on bearings in the casing and of blades, which leave the rotor center open.
- 35      22. An apparatus as recited in claim 11, characterized in that the inlet and outlet (12, 16) are so disposed respective of each other that the direction of the flow

changes about 100 degrees at most when the flow passes through the apparatus.

23. An apparatus as recited in claim 11, **characterized** in  
5 that the outlet (16, 116, 216) is tangential to the di-  
rection of rotation of the rotor.